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ABSTRACT

The effects of "cuddliness" on proximal and distal maternal stimulation and on maternal attachment were examined in 32 healthy mother/infant pairs. All mothers were black, inner-city, of low socioeconomic status, primaparous, bottle-feeding, and between 16 and 24 years of age. All also had adequate prenatal care, no complications, and low levels of medication during labor and delivery. Brazelton testing, mother/infant observations, and a maternal attachment interview provided longitudinal information about 32 urban black infants of low socioeconomic status. Infants, tested at 3 days and at 1 month of age, were grouped as being either "low-cuddly" or "high-cuddly." Low-cuddly infants received more overall handling, although the patterns suggested qualitative differences in vigorous and gentle tactile stimulation as a function of cuddliness. Distal stimulation was unaffected by cuddliness alone, but the interaction of cuddliness and sex influenced both proximal and distal maternal stimulation. Maternal attachment was not related to infant cuddliness. Results are discussed in terms of sociocultural influences and mother/infant synchrony. (Author/RH)

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Neonatal Cuddliness and Maternal Handling Patterns in the First Month of Life

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Running head: Neonatal Cuddliness and Maternal Handling Patterns

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Abstract

Brazelton testing, mother-infant observations, and a maternal attachment interview provided longitudinal information about 32 black, low-SES, urban high- and low-cuddly infants at 3 days and 1 month. Low-cuddly infants received more overall handling, although the patterns suggested qualitative differences in vigorous and gentle tactile stimulation as a function of cuddliness. Distal stimulation was unaffected by cuddliness alone, but the interaction of cuddliness and sex influenced both proximal and distal maternal stimulation. Maternal attachment was not related to infant cuddliness. The results are discussed in terms of sociocultural influences and mother-infant synchrony.

Neonatal Cuddliness and Maternal Handling Patterns in the First Month of Life

Recent theory and research has passed from a unidirectional model of mother-infant interaction stressing the mother to a reciprocal model in which the infant is viewed as having considerable influence upon his mother's behavior. Thoman (1974) has suggested a triadic model of infant-mother-infant, in which infant behaviors modify parental behavior which in turn may modify subsequent infant behavior. Thus, both the infant and the mother contribute to the development of a synchronous relationship, provided that the infant's cues are accurately perceived and maternal response is appropriate.

The neonatal behavioral repertoire primarily functions to signal the need for physical contact and to prolong such contact, since physical contact is a prerequisite for most caretaking and social interactions. Cuddliness is one behavior which prolongs physical contact; positive effects of cuddliness have been noted in both animal and human literature (Copans, 1974; Harlow, 1958). Normative research has suggested that infant cuddliness and maternal handling are not related at birth, but they do become increasingly related over time (Ainsworth & Blehar, 1975). Furthermore, cuddliness seems to be relatively independent in that it does not seem to be consistently related to any other infant behaviors

(Horowitz et al., 1971). Wide individual differences in cuddliness are present at birth and remain stable over time: Many infants are not cuddly and actively resist close physical contact.

Little research has been directed toward the ways in which mothers react to cuddly and non-cuddly infants and how infant cuddliness influences subsequent mother-infant interactions. The research has suggested that synchronous mother-infant functioning is important for optimal development; thus, we might expect that effective mothers would adapt themselves to their infants' cues concerning physical contact. Conversely, mothers who do not respond to the cues of their infants might be laying the groundwork for a maladaptive mother-infant relationship. In addition, physical contact often sets the stage for mother-infant social interaction. A mother of a low-cuddly infant might reduce her handling of the infant in accordance with his cues: thus, she would be effectively responding to her infant but at the same time decreasing his opportunities for social interaction, which might also be deleterious to optimal infant development. It is important to evaluate whether a decrease in physical contact or specifically in holding brings about a concomitant, compensatory increase in other types of stimulation. The present research examines the effects of cuddliness on maternal stimulation, both proximal and distal, and maternal attachment.

Method

Subjects

Subjects were 32 healthy mother-infant pairs. All subjects were black, inner-city, of low socioeconomic status, primaparous, bottle-feeding, and between 16 and 24 years old, with adequate prenatal care, no complications,

and low levels of medication during labor and delivery. Newborn birthweight averaged 3074 grams, and Apgar scores were at least 9. Subjects meeting the above criteria were chosen based on Brazelton ratings of cuddliness: 16 infants (8 male, 8 female) had scores of 1-3 and were designated low-cuddly, and 16 infants (8 male, 8 female) had scores of 7-9 and were designated high-cuddly. Brazelton examinations were given to 78 infants to obtain the sample. Voluntary written consent was obtained from all mothers, and the study was approved by the University of Maryland Hospital Research Review Board.

Procedure

Brazelton examinations and observations of mother-infant interaction were conducted longitudinally when the infants were 3 days and 1 month old ($\pm$ 7 days). There was no subject attrition. Three trained Brazelton examiners with interrater reliability of 90% alternated testing the infants: two were naive regarding the true purpose of the study and the infant's prior cuddliness rating, and they conducted all one-month examinations. Five naive observers rated the mother-infant interaction. They observed in interchanging pairs, and reliabilities for all pairs were above 90%.

The infant was in an alert state when the observation of mother and infant began, and state was continuously monitored. Observations were continuous for 10 of every 15 seconds throughout a 10-minute period. Maternal behaviors were operationally defined. Proximal stimulation included holding, gentle tactile stimulation, vigorous tactile stimulation, and affection. Distal stimulation included vocalizations, smiling, looking at the infant, and toy play. Three standard toys were provided.

A brief interview with the mother was conducted at the end of each session, consisting of 10 open-ended questions centering on early attachment. Responses were later rated qualitatively for earliness and intensity of attachment, and interrater reliability was 92%.

Results

Cuddliness was stable over time, $r = +.51$, $p < .01$. The effects of cuddliness on maternal stimulation were assessed by two repeated measures factorial multivariate analyses of variance, one for proximal stimulation and one for distal stimulation.

Cuddliness had a significant effect on overall proximal stimulation, $F(1,28) = 6.89$, $p < .05$, but not on overall distal stimulation, $F(1,28) = 2.74$, n.s. None of the univariate tests were significant. Canonical correlations for the proximal variables were: vigorous stimulation, $r = -.68$; affection, $r = -.54$; gentle stimulation, $r = +.42$; and holding, $r = -.36$. Thus, cuddliness did not significantly affect any one behavior, but it did affect a combination of behaviors resulting in different handling patterns. High-cuddly infants received more gentle stimulation, and low-cuddly infants received more of the other types of proximal stimulation, particularly vigorous stimulation. The means and standard deviations of the maternal stimulation variables are presented in Table 1.

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Insert Table 1 about here

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Significant cuddliness x sex interactions were found for overall proximal stimulation, $F(1,28) = 6.42$, $p < .05$, and for overall distal

stimulation, $F(1,28) = 9.21$, $p < .01$. The univariate test for toy play was significant, $F(1,28) = 5.97$, $p < .05$. Mothers engaged in toy play most with low-cuddly females and high-cuddly males. Canonical correlations for proximal behaviors were: vigorous stimulation, $r = -.70$; gentle stimulation, $r = +.50$; affection, $r = -.47$; and holding, $r = +.36$. As shown in Table 1, low-cuddly males received a great deal of vigorous stimulation and holding, moderate affection, and relatively little gentle stimulation. High-cuddly males received slightly more affection but low amounts of other tactile stimulation. Low-cuddly females received much affection and moderately high levels of other tactile variables. High-cuddly females received the most gentle stimulation, moderately little vigorous stimulation, and relatively little affection and holding.

Canonical correlations for distal behaviors were: vocalizations, $r = +.97$; toy play, $r = +.28$; smiling, $r = -.24$; amd looking, $r = -.02$. The means suggest that mothers of low-cuddly females show high levels of all types of distal stimulation, as shown in Table 1. With regard to the other three groups, toy play is greater with high-cuddly males, and vocalizations are more frequent for high-cuddly females. These patterns accounted for most of the variance as a function of cuddliness and sex.

The interaction of cuddliness and age was not significant in either analysis. A significant three-way interaction was found for overall proximal stimulation, $F(1,28) = 6.37.$, $p < .05$, and the canonical correlations suggested that affection accounted for most of the variance, increasing over time most for low-cuddly females and high-cuddly males.

T-tests showed no significant effect of cuddliness on maternal attachment, t (30) = .19, n.s.

Discussion

The stability of individual differences in cuddliness over the first month was confirmed, and newborn cuddliness did affect maternal proximal handling patterns. As expected, mothers used more gentle tactile stimulation with high-cuddly infants and more vigorous tactile stimulation with low-cuddly infants. However, in general, the pattern of maternal handling involved more tactile stimulation for low-cuddly infants. It seems possible that mothers were attempting to elicit a cuddling response from their infants, and when this response was not forthcoming they increased their efforts. Osofsky (1976) found that maternal attempts to aid cuddling were negatively related to the cuddliness of the infant, within a similar subject population. This may be related to the black, low-SES cultural emphasis on physical contact, in which child-rearing patterns stress proximal stimulation (Lewis & Wilson, 1972). In addition, many mothers indicated a strong personal contact need in the attachment interview, and they may be responding to their own needs rather than to the cues of the infants. Another possible interpretation is one of increased maternal anxiety and feelings of inadequacy leading to increased attempts to elicit a positive response from the infant.

The asynchrony demonstrated in the overall handling patterns did not generalize to the quality of behaviors. Mothers showed qualitative differences in the types of touch they used with high- and low-cuddly infants, demonstrating a great deal of responsiveness to the infants. Subtle differences in

interactional styles were apparent shortly after birth and formed consistent, synchronous patterns of interaction.

The effect of cuddliness was generally limited to proximal stimulation, although the interaction of cuddliness and sex had some effects upon distal stimulation, most notably in toy play and vocalizations. Maternal attachment seems to relate more strongly to variables other than cuddliness.

In conclusion, cuddliness does affect maternal handling patterns, especially proximal stimulation. Mothers provide more overall tactile stimulation for low-cuddly infants, although the quality of the stimulation varies. These patterns are consistent over the first month. Cuddliness does not seem to affect maternal attachment. Future research is necessary to explore the effects of cuddliness within other populations and over longer periods of time.

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Table 1

Means of Maternal Variables by Cuddliness and Sex

	Low Cuddliness			High Cuddliness		
Maternal Variables	Males $\bar{X}$ (S.D.)	Females $\bar{X}$ (S.D.)	Total $\bar{X}$ (S.D.)	Males $\bar{X}$ (S.D.)	Females $\bar{X}$ (S.D.)	Total $\bar{X}$ (S.D.)
Proximal Stimulation						
Holding	7.62 (11.17)	7.37 (10.55)	7.50 (10.69)	4.37 (10.68)	3.18 (4.72)	3.78 (8.15)
Vigorous Stimulation	20.06 (11.06)	14.75 (12.21)	17.40 (11.77)	10.25 (10.01)	12.62 (12.63)	11.43 (11.28)
Gentle Stimulation	7.93 (4.83)	8.37 (6.93)	8.15 (5.88)	6.81 (7.19)	22.43 (10.70)	14.62 (9.27)
Affection	8.12 (7.70)	14.81 (11.38)	11.46 (10.14)	8.43 (12.40)	6.75 (11.16)	7.59 (11.64)
Distal Stimulation						
Vocalizations	9.37 (12.86)	19.25 (12.20)	14.31 (13.27)	6.93 (10.18)	17.25 (15.78)	12.09 (14.08)
Smiling	2.87 (3.96)	6.68 (8.10)	4.78 (6.56)	3.81 (8.01)	3.18 (5.41)	3.50 (6.73)
Looking	33.62 (7.09)	36.37 (6.19)	35.00 (6.70)	37.81 (2.90)	35.62 (7.49)	36.71 (5.69)
Toy play	4.81 (5.12)	14.56 (12.23)	9.68 (10.47)	8.50 (9.63)	5.50 (6.84)	7.00 (8.35)